

Serial No. 10/672,533  
Attorney Docket No. RAYTP0170USA

Reply to Office Action Dated August 12, 2004  
Reply Dated November 8, 2004

### REMARKS

Following entry of this amendment, claims 1-20 will be pending. Claim 13 has been amended without change in scope to correct an obvious informality. Claims 1 and 14 have been amended to clarify the features of the invention. Claims 1 and 14 have been amended to include the phrase "the retention mechanism operationally configured to maintain the at least one fin in the stowed orientation when not deployed." Claim 1 has also been amended to include the phrase "the tubular cam." Claim 14 has also been amended to include the phrase "the deployment mechanism."

#### I. ALLOWABLE SUBJECT MATTER

Applicants note the Examiner's indication that claims 3, 8-13, 16, 19 and 20 constitute allowable subject matter. Claims 3 and 8-13 depend directly or indirectly from amended claim 1. Claims 16, 19 and 20 depend directly or indirectly from amended claim 14. Thus, claims 3, 8-13, 16, 19 and 20 are believed to be patentable for at least the reasons stated below with regard to amended claims 1 and 14, respectively.

#### II. DOUBLE PATENTING

Claims 1-2, 4, and 8-19 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,761,331 ('331). Withdrawal of the rejection is respectfully requested for at least the following reasons.

Amended claims 1 and 14 of the present application recite, *inter alia*, the feature "a tubular cam including a retention mechanism." (Emphasis added). Further, amended claims 1 and 14 have been amended to include, *inter alia*, the feature: "the retention mechanism operationally configured to maintain the at least one fin in the stowed orientation." (Emphasis added). Claims 1-19 of the '331 patent do not include a tubular cam including a retention mechanism wherein the retention mechanism is operationally configured to maintain the at least one fin in the stowed orientation when not deployed. Claims 2, 4 and 8-13 of the present application depend from amended claim 1. Claims 15-19 of the present application depend from amended claim 14.

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Thus, claims 1-2, 4, and 8-19 are patentably distinct from the cited claims of the '331 patent at least because the cited claims do not mention a tubular cam **including a retention mechanism** wherein the **retention mechanism** is operationally configured to maintain the at least one fin in the stowed orientation when not deployed. Therefore, amended claim 1 of the present application and claims 2, 4 and 8-13 that depend therefrom and amended claim 14 of the present application and claims 15-19 that depend therefrom are patentable over claims 1-19, respectively, of the '331 patent. Accordingly, withdrawal of the double patenting rejections is respectfully requested.

### III. REJECTION OF CLAIMS UNDER 35 U.S.C. § 112

Claims 5-7 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. The Examiner contends the term "the tubular cam" in claim 5, line 2, lacks antecedent basis. The Applicants respectfully disagree. Claim 5 depends from claim 1. Claim 1 recites in line 2 "a tubular cam." Thus, antecedent basis is provided for the term "the tubular cam" in claim 5, line 2. Further, claims 6 and 7 depend from claim 5 and for at least the reasons stated above also have antecedent basis for the term "the tubular cam." Therefore, since the claims are not indefinite with regard to the term "the tubular cam," withdrawal of the rejection is respectfully requested.

### IV. CLAIMS OBJECTION

Claim 13 stands objected to because of an informality. Claim 13 has been amended to correct this informality in accordance with the Examiner's suggestion. That is, claim 13, line 2 has been amended to replace "and end" with --an end--. Thus, withdrawal of the objection is respectfully requested.

### V. REJECTION OF CLAIMS UNDER 35 USC §102

Claims 1-2, 4, 14-15 and 17-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Crossfield, U.S. Patent No. 4,664,339 ("Crossfield"). Withdrawal of the rejection is respectfully requested for at least the following reasons.

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Amended claims 1 and 14 of the present application recite, *inter alia*, the feature "a tubular cam **including a retention mechanism**." (Emphasis added). Further, amended claims 1 and 14 have been amended to include, *inter alia*, the feature: "the **retention mechanism** operationally configured to maintain the at least one fin in the stowed orientation when not deployed." (Emphasis added). Crossfield does not teach or suggest a tubular cam as claimed in amended claims 1 and 14. Crossfield does not teach or suggest a **retention mechanism** included in the tubular cam that is operationally configured to maintain the at least one fin in the stowed orientation when not deployed.

Referring now to FIG. 1 of Crossfield, reproduced below for the Examiner's convenience, Crossfield discloses a missile appendage deployment mechanism 10. The missile 10 includes a wing 12 having a first end portion 14 and a second end portion 16. The first end portion 14 includes an integrally formed lug 18 (annotation added) having an aperture 19 therethrough for receiving a hinge pin 20 therethrough. The pin 20 is also received through the aperture 21 (annotation added) in a clevis 22. The clevis 22 is mounted vertically inside a missile 24. The wing 12 is held in this stowed position by a restraining pin 26 mounted in the side of the missile 24 and engaging the second end portion 16 of the wing and holding the wing 12 in its stowed position. (annotation added) The missile appendage deployment mechanism (10) uses a compression spring 28 or any similar biasing means. The spring 28 urges the wing 12 upwardly in the airstream of the missile 10.

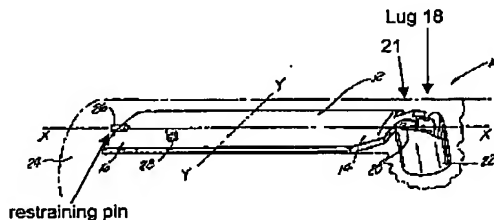


FIG. 1 of Crossfield

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The present invention as claimed in amended claim 1, amended claim 14 and represented in FIG. 18, reproduced below for the Examiner's convenience, comprises, *inter alia*, a deployment mechanism.

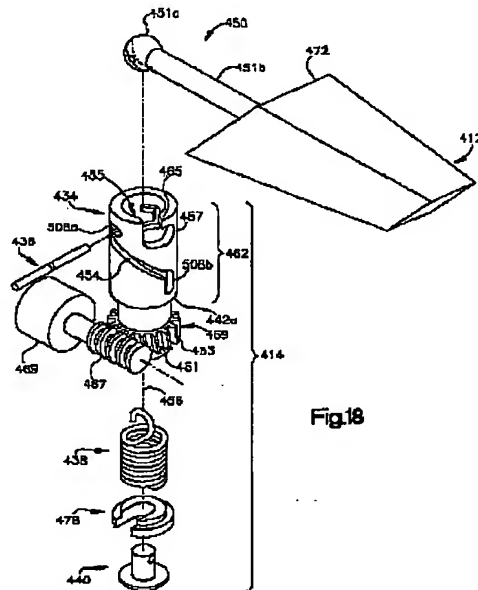


Fig.18

FIG. 18 of Present Invention

With regard to amended claim 1, the deployment mechanism comprises, *inter alia*, “a tubular cam 434 including a retention mechanism 455.” (emphasis added). Further, amended claim 1 recites the feature: “the retention mechanism operationally configured to maintain the at least one fin in the stowed orientation when not deployed.” (Emphasis added). (See, for example, amended claim 1; page 20, lines 3-17 and FIGS. 16-20). Claim 14 has been amended to contain similar language.

Crossfield does not disclose a tubular cam. To the contrary, Crossfield discloses a solid clevis 22, see, for example, FIG. 1. Additionally, Crossfield discloses the restraining pin 26

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mounted in the side of the missile 24 and engaging the second end portion 16 of the wing, see, for example, FIG. 1, col. 2, lines 40-43. Crossfield does not teach or suggest that the restraining pin 26 is part of the clevis 22.

Therefore, since Crossfield does not teach or suggest one or more of the features as claimed in amended claim 1, amended claim 1 and the claims that depend therefrom are patentable over Crossfield for at least the reasons stated above. Further, since Crossfield does not teach or suggest one or more of the features as claimed in amended claim 14, amended claim 14 and the claims that depend therefrom are also patentable over Crossfield for at least the reasons stated above.

## VI. REJECTION OF CLAIMS UNDER 35 USC §103

Claims 5-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Crossfield in view of Garehime, U.S. Patent No. 4,644,845 ("Garehime"). Withdrawal of the rejection is respectfully requested for at least the following reasons.

Claims 5-7 depend directly or indirectly from amended claim 1 and are patentable over Crossfield for at least the reasons discussed above with regard to amended claim 1. Garehime does not make up for the deficiencies of Crossfield. That is, Garehime does not disclose a tubular cam including a retention mechanism or the retention mechanism operationally configured to maintain the at least one fin in the stowed orientation as recited in amended claims 1 and 14. Since there is no teaching or suggestion of the tubular cam including a retention mechanism or the retention mechanism included in the tubular cam is operationally configured to maintain the at least one fin in the stowed orientation as recited in amended claims 1 and 14, claims 5-7 are patentable over Crossfield and Garehime alone or in combination.

## VII. CONCLUSION

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present invention.

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Any fee(s) resulting from this communication is hereby authorized to be charged to our  
Deposit Account No. 18-0988; Our Order No. RAYTP0170USA.

Respectfully submitted,  
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